REMARKS

In response to the Office Action issued by the USPTO on 26 October 2010, the Applicant submits the following remarks and requests reconsideration.

The Examiner has rejected Claims 1 and 5 as being obvious over Bommier in view of Olcott or Johnson. In particular, the Examiner, relying on figures 2 and 5 and lines 9 to 54 of column 5, contends that Bommier teaches a brake disc comprising a C-C core layer and a C-C wear layer where the wear layer has a density lower than the core layer. The Examiner has also rejected Claims 2, 6, 7, 9, 15 and 16 as being obvious over Bommier in view of Olcott and Johnson and further in view of Purdy or Dietrich.

The Applicant notes that this is a simple restatement of the Examiner's previous position. The Examiner argues (at section 4 of the Office Action) that the Applicant's arguments submitted on 23 July 2010 have been taken into account but were not found persuasive. There, the Applicant argued that Bommier described the density of a preform for a brake disc before densification, but not the relative densities of its component parts after densification. However, the Examiner states that Bommier teaches, at lines 7 to 12 of column 12 that the densities of the core layer and wear layer of a brake disc after densification are clearly taught.

The Applicant, however, considers that the Examiner errs in her understanding of lines 7 to 12 of column 12 of Bommier, which passage forms part of Example 4 of the disclosure. The passage to which the Examiner refers reads:

> *After compression, a fibrous substrate 27mm thick was obtained, consisting of a central coarsely textured layer 17mm thick and with an apparent density of 0.5, and constituted by two finely textured layers each 5mm thick and with an apparent density of 0.15. Its overall apparent density is 0.175.*

The very next line of the disclosure of Bommier reads:

> *The other elements of the test are those in Example 1.*

It is clear to the skilled person, therefore, that the description of Example 4 of Bommier describes only those details which differ from Example 1.

Where Example 4 of Bommier describes compression of a fibrous substrate, it is clear to the person having ordinary skill in the art that Bommier is not referring to the densification of that disc. Rather, Bommier refers to the compression of the fibers into a preform ready for densification. This is reflected in the corresponding disclosure of Example 1 (at lines 28 to 36 of column 11), which describes the compression of a fibrous substrate to a thickness of 26mm.

Example 1 then goes on to describe (at lines 43 to 48 of column 11) that the compressed fibrous substrate is densified by vapour deposition of pyrolytic carbon at 1050°C.

It is quite plain to the person skilled in the art that this densification stage is also carried out on the substrate of Example 4. As noted above, Example 4 describes how its steps are, other than those specifically described, the same as those of Example 1. Quite clearly, there is no disclosure that the densification stage described in Example 1 does not take place in Example 4 or takes place under different conditions. There can therefore be no reading of Example 4 which excludes this densification stage.

The upshot of this, as would be understood by one skilled in the art, is that the passage in Bommier to which the Examiner specifically refers in order to discredit the Applicant's assertions that Bommier does not describe a completed brake disc having core layers which are less dense than the wear layers, does not in fact describe a complete (*i.e.* densified) brake disc.

Moreover, it is noted that without such densification, the compressed fiber batt described in Example 4 of Bommier would be useless as a brake disc of any kind, as the batt would not have sufficient integrity to withstand the frictional forces demanded of it. The person having ordinary skill in the art would automatically have understood that such a batt would have required densification before use as a brake disc, even if the disclosure of Bommier did not, as it does, explicitly state this to be so.

The Applicant therefore submits that the Examiner's rejection of Claims 1 and 5 as being obvious over Bommier in view of Olcott or Johnson is untenable for the reasons described in the Applicant's response of 23 July 2010, and further in view of the arguments described above.

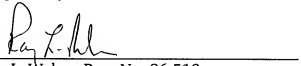
These arguments noted that the relatively low density of the outer portions of the preforms described in Bommier as compared to the inner portion of those preforms allowed more space and greater porosity to ensure an even penetration of carbon during densification. In other words, if the outer portions were not of relatively low density, it would be unlikely that the inner portion could be sufficiently densified. Moreover, greater outer porosity ensures more space for filling with carbon during densification. Thus if any region of the disc of Bommier is of relatively high density it is the wear face, thereby distinguishing from the Claims in suit.

It is of particular note, for example, that the density of the friction element described in Example 1 of Bommier has a density of 1.75 (see line 51 of column 2), which is very close to the maximum density of C-C (1.85gcm-3, as noted in the application at *e.g.* line 16 of page 2). The skilled person would understand that such a high density of this material indicates an even densification as described above, and moreover would be irreconcilable with a difference in density between inner and outer regions of the disc.

The Applicant therefore submits that Claims 1 and 5 are inventive over Bommier in view of Olcott and Johnson. Moreover, the Applicant submits that for the same reasons, mutatis mutandis, Claims 2, 6, 7, 9, 15 and 16 are inventive over Bommier in view of Olcott and Johnson and further in view of Purdy or Dietrich.

The Applicant therefore politely requests that the Examiner withdraw her rejections to all pending Claims and passes the application for allowance without delay.

Respectfully submitted,



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